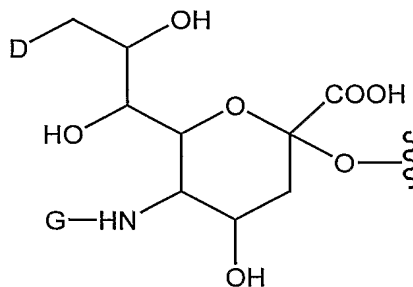


WHAT IS CLAIMED IS:

- 1 1. A follicle stimulating hormone peptide comprising the moiety:



2
3 wherein

4 D is a member selected from -OH and R^1 -L-HN-;

5 G is a member selected from R^1 -L- and $-C(O)(C_1-C_6)alkyl$;

6 R^1 is a moiety comprising a member selected a moiety comprising a straight-
7 chain or branched poly(ethylene glycol) residue; and

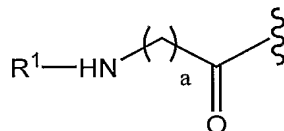
8 L is a linker which is a member selected from a bond, substituted or

9 unsubstituted alkyl and substituted or unsubstituted heteroalkyl,

10 such that when D is OH, G is R^1 -L-, and when G is $-C(O)(C_1-C_6)alkyl$, D is

11 R^1 -L-NH-.

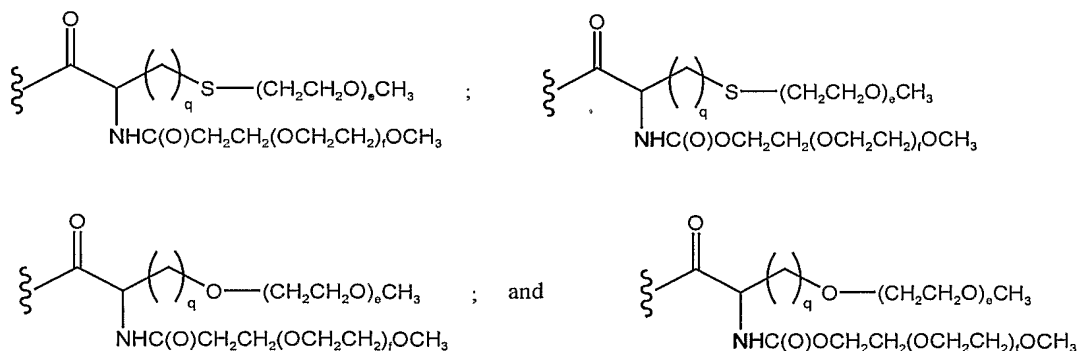
- 1 2. The peptide according to claim 1, wherein L- R^1 has the formula:



2
3 wherein

4 a is an integer from 0 to 20.

- 1 3. The peptide according to claim 1, wherein R^1 has a structure that is a member
2 selected from:

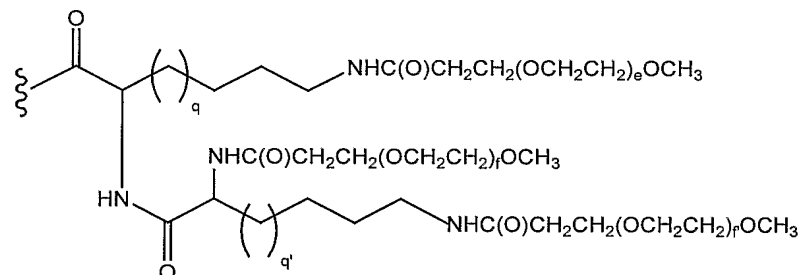
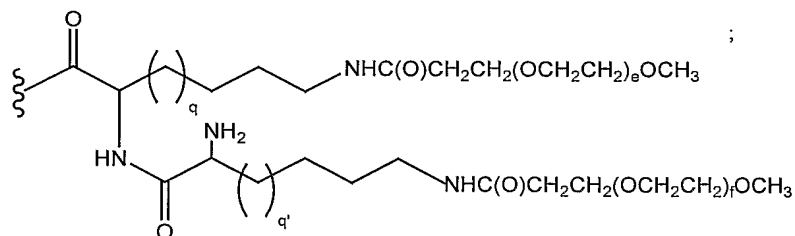
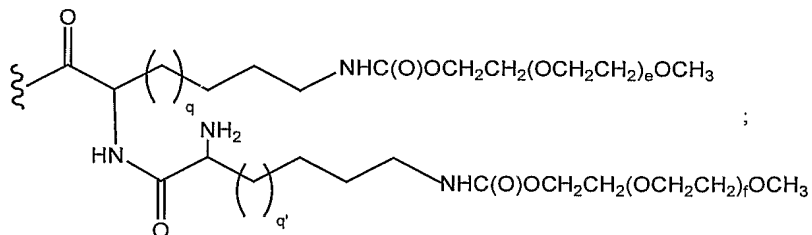


3
4 wherein

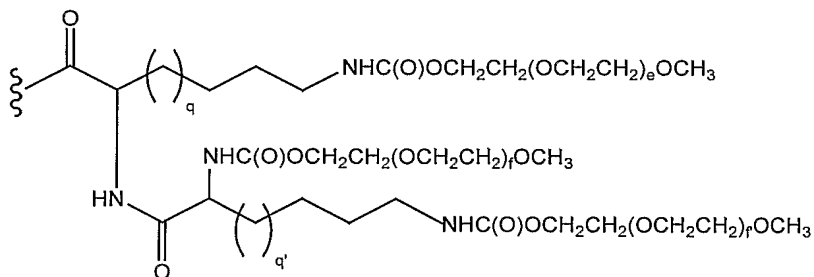
5 e and f are integers independently selected from 1 to 2500; and

6 q is an integer from 0 to 20.

1 **4.** The peptide according to claim 1, wherein R¹ has a structure that is a member
2 selected from:



; and

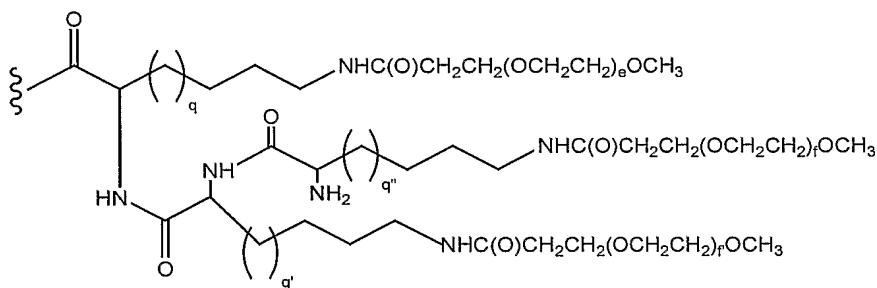
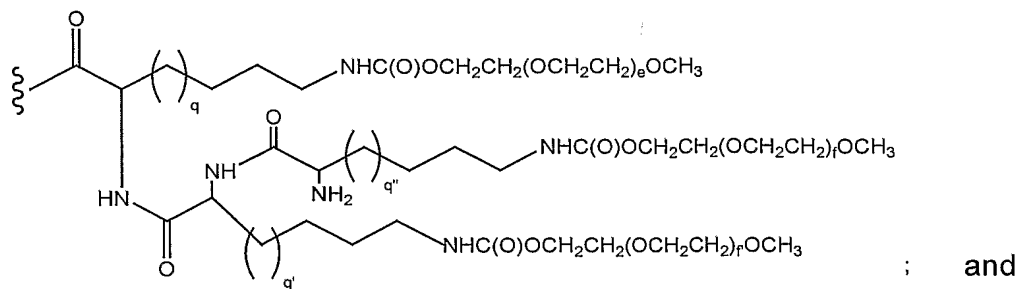


3
4 wherein

5 e, f and f' are integers independently selected from 1 to 2500; and

6 q and q' are integers independently selected from 1 to 20.

5. The peptide according to claim 1, wherein R^1 has a structure that is a member selected from:

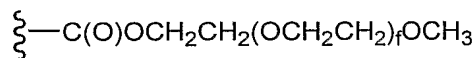
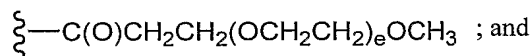


wherein

e, f and f' are integers independently selected from 1 to 2500; and

q, q' and q'' are integers independently selected from 1 to 20.

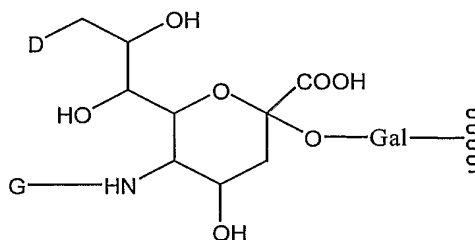
6. The peptide according to claim 1, wherein R^1 has a structure that is a member selected from:



wherein

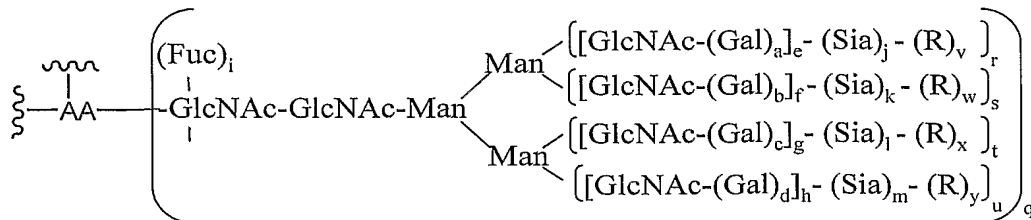
e and f are integers independently selected from 1 to 2500.

7. The FSH peptide according to claim 1, wherein said moiety has the formula:



8. The peptide according to claim 1, wherein said peptide has an amino acid sequence selected from SEQ. ID. NO:1 and SEQ ID NO:2.

- 1 9. The FSH peptide according to claim 1, wherein said moiety has the formula:



2

3 wherein

4 a, b, c, d, i, r, s, t, and u are integers independently selected from 0 and 1;

5 q is 1;

6 e, f, g, and h are members independently selected from the integers from 0 to 6;

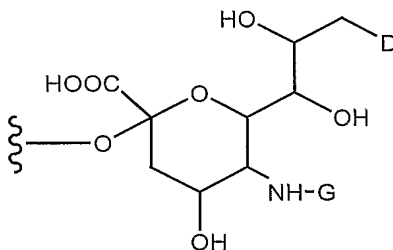
7 j, k, l, and m are members independently selected from the integers from 0 and 100;

8 v, w, x, and y are independently selected from 0 and 1, and least one of v, w, x and y

9 is 1;

10 AA is an amino acid residue of said FSH peptide;

11 Sia-(R) has the formula:



12

13 wherein

14 D is a member selected from -OH and R¹-L-HN-;

15 G is a member selected from R¹-L- and -C(O)(C₁-C₆)alkyl;

16 R¹ is a moiety comprising a member selected a straight-chain or branched

17 poly(ethylene glycol) residue; and

18 L is a linker which is a member selected from a bond, substituted or

19 unsubstituted alkyl and substituted or unsubstituted heteroalkyl,

20 such that when D is OH, G is R¹-L-, and when G is -C(O)(C₁-C₆)alkyl, D is

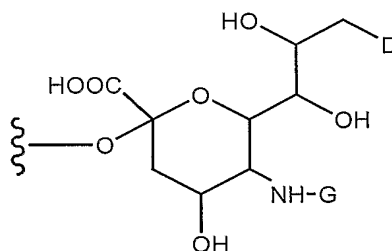
21 R¹-L-NH-.

1 **10.** The peptide according to claim 9, wherein said amino acid residue is an
2 asparagine residue.

1 **11.** The peptide according to claim 10, wherein said amino acid residue is an
2 asparagine residue which is a member selected from N7 of SEQ ID NO:2, N24 of
3 SEQ ID NO:2, N52 of SEQ ID NO:1, and N78 of SEQ ID NO:1, and combinations
4 thereof.

1 **12.** The peptide according to claim 1, wherein said peptide is a bioactive follicle
2 stimulating hormone peptide.

1 **13.** A method of making a FSH peptide conjugate comprising the moiety:



2
3 wherein

4 D is a member selected from -OH and R^1 -L-HN-;

5 G is a member selected from R^1 -L- and $-C(O)(C_1-C_6)alkyl$;

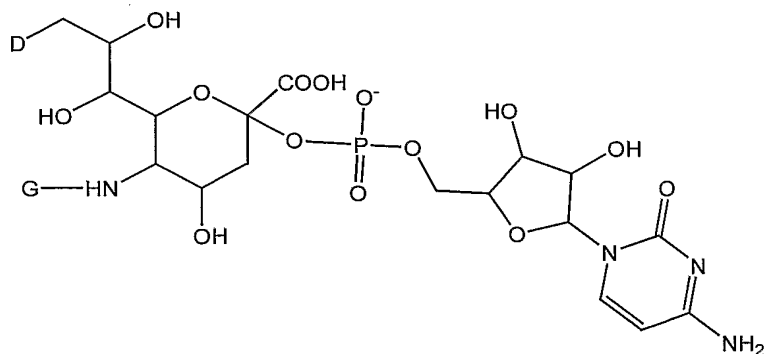
6 R^1 is a moiety comprising a member selected a straight-chain or branched
7 poly(ethylene glycol) residue; and

8 L is a linker which is a member selected from a bond, substituted or unsubstituted
9 alkyl and substituted or unsubstituted heteroalkyl,

10 such that when D is OH, G is R^1 -L-, and when G is $-C(O)(C_1-C_6)alkyl$, D is
11 R^1 -L-NH-,

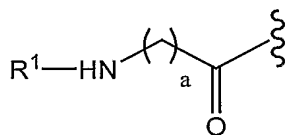
12 said method comprising:

13 (a) contacting a substrate FSH peptide with a PEG-sialic acid donor moiety having the
14 formula:



and an enzyme that transfers said PEG-sialic acid onto an amino acid or glycosyl residue of said FSH peptide, under conditions appropriate for the transfer.

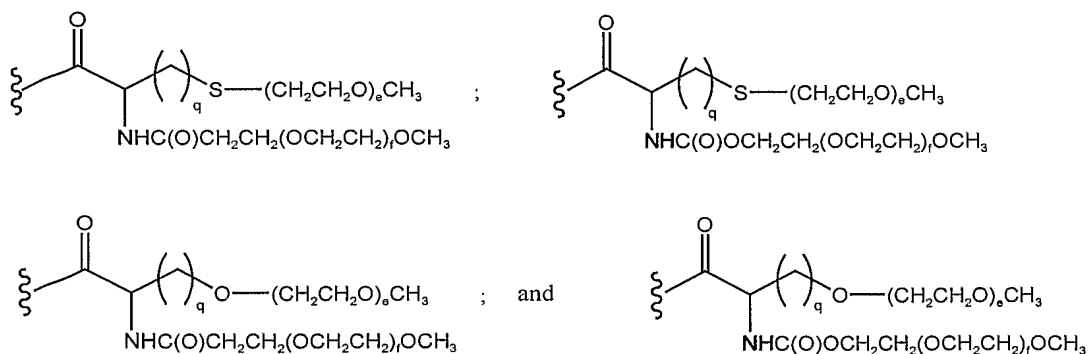
14. The method according to claim 13, wherein L-R¹ has the formula:



wherein

a is an integer from 0 to 20.

15. The method according to claim 13, wherein R¹ has a structure that is a member selected from:

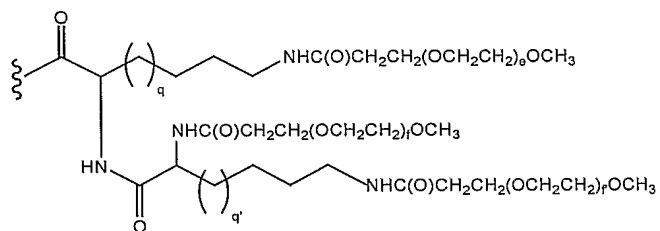
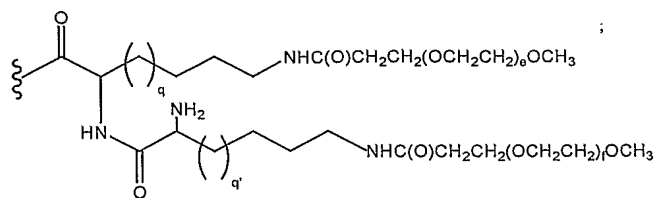
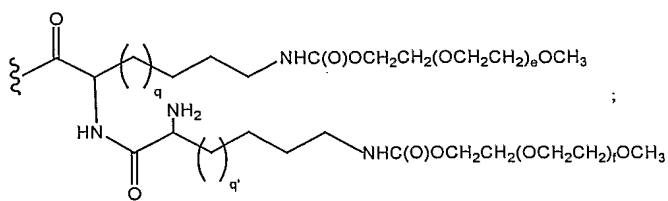


wherein

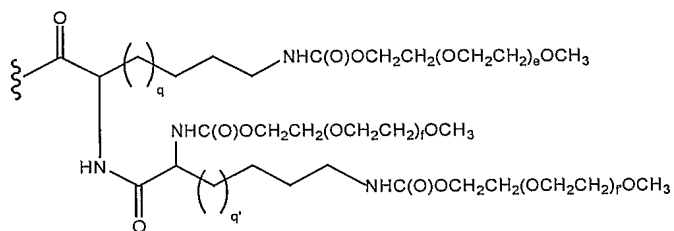
e and f are integers independently selected from 1 to 2500; and

q is an integer from 0 to 20.

16. The method according to claim 13, wherein R¹ has a structure that is a member selected from:



and

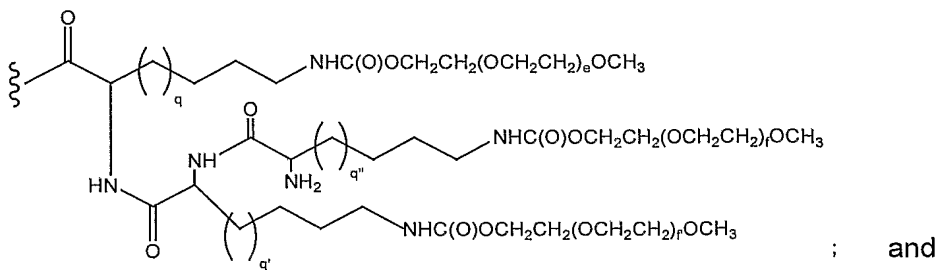


wherein

e, f and f' are integers independently selected from 1 to 2500; and

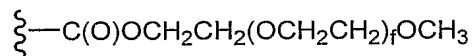
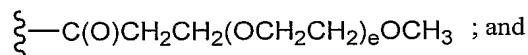
q and q' are integers independently selected from 1 to 20.

- 1 **17.** The method according to claim 13, wherein R¹ has a structure that is a member
2 selected from:



- 3
4 wherein
5 e, f and f' are integers independently selected from 1 to 2500; and
6 q, q' and q'' are integers independently selected from 1 to 20.

- 1 **18.** The method according to claim 13, wherein R¹ has a structure that is a member
2 selected from:



- 3
4 wherein
5 e and f are integers independently selected from 1 to 2500.

- 1 **19.** The method of claim 13, further comprising, prior to step (a):
2 (b) expressing said substrate follicle stimulating hormone peptide in a
3 suitable host.

- 1 **20.** The method of claim 13, wherein said host is selected from an insect cell and a
2 mammalian cell.

- 1 **21.** A method of stimulating ovarian follicles in a mammal, said method comprising
2 administering to said mammal a peptide according to claim 1.

1 **22.** A method of treating a condition in a subject in need thereof, said condition
2 characterized by reproductive infertility said method comprising the step of
3 administering to the subject an amount of a peptide according to claim 1, effective to
4 ameliorate said condition in said subject.

1 **23.** A pharmaceutical formulation comprising the follicle stimulating hormone
2 peptide according to claim 1, and a pharmaceutically acceptable carrier.